THAT WHICH IS CLAIMED IS:

1. An apparatus for forming optical fiber from a glass preform using a forming gas, said apparatus comprising:

a) a draw furnace having first and second opposed ends, said draw furnace defining an exit opening at said second end and a furnace passage extending between said first and second ends; and

b) a control tube extending through said exit opening of said draw furnace, said control tube defining first and second opposed tube openings and a tube passage extending between said first and second tube openings, said control tube including a first tube section and a second tube section, wherein said first tube opening and said first tube section are disposed in said furnace passage and cooperate with said furnace passage to form a buffer cavity adjacent said control tube, and wherein said second tube opening and said second tube section are disposed downstream of said draw furnace;

c) wherein said tube passage includes an inner diameter, said inner diameter of said tube passage being less than an inner diameter of said furnace passage; and

d) wherein said draw furnace and said control tube are adapted such that substantially all of the forming gas enters said furnace passage upstream of said first tube opening and exits said apparatus through said control tube.

2. The apparatus of Claim 1 wherein said draw furnace and said control tube are adapted such that substantially all of the forming gas exits said apparatus through said second tube opening.

3. The apparatus of Claim 1 wherein said draw furnace includes a housing and said control tube is removably secured to said housing.

4. The apparatus of Claim 3 including an extended support tube defining a support tube passage, wherein said support tube is secured to said housing and at least a portion of said second tube section is disposed in said support tube passage.

5. The apparatus of Claim 1 wherein said furnace includes a heating element surrounding a heating section of said furnace passage and wherein said first tube opening is disposed downstream of said heating element.

6. The apparatus of Claim 1 including a door assembly disposed adjacent said second tube opening and defining a door opening, wherein said door assembly is operable to adjust a size of said door opening.

7. The apparatus of Claim 1 wherein said control tube is formed of quartz glass.

8. The apparatus of Claim 1 wherein said buffer cavity has a length of between about 60 and 200 mm.

9. The apparatus of Claim 1 wherein said second tube section has a length of between about 250 and 1370 mm.

10. The apparatus of Claim 1 wherein said inner diameter of said tube passage is substantially uniform from said first tube opening to said second tube opening.

11. The apparatus of Claim 1 wherein said inner diameter of said tube passage is between about 25 and 100 mm.

12. The apparatus of Claim 1 wherein said inner diameter of said tube passage is between about 20 and 70 percent of said inner diameter of said furnace passage.

13. The apparatus of Claim 1 including a forming gas supply adapted to provide a flow of the forming gas into said furnace passage.

14. A method for forming an optical fiber, said method comprising:

a) providing an apparatus including:

a draw furnace having first and second opposed ends, the draw furnace defining an exit opening at the second end and a furnace passage extending between the first and second ends; and

a control tube extending through the exit opening of the draw furnace, the control tube defining first and second opposed tube openings and a tube passage extending between the first and second tube openings, the control tube including a first tube section and a second tube section, wherein the first tube opening and the first tube section are disposed in the furnace passage and cooperate with the furnace passage to form a buffer cavity adjacent the control tube, and wherein the second tube opening and the second tube section are disposed downstream of the draw furnace;

wherein the tube passage includes an inner diameter, the inner diameter of the tube passage being less than an inner diameter of the furnace passage;

b) drawing an optical glass fiber through the furnace passage and the control tube; and

c) during said step of drawing an optical glass fiber, flowing a forming gas through the furnace passage and the control tube such that substantially all of the forming gas enters the furnace passage upstream of the first tube opening and exits the apparatus through the control tube.

15. The method of Claim 14 including flowing the forming gas through the furnace passage and the control tube such that substantially all of the forming gas exits the apparatus through the second tube opening.

16. The method of Claim 14 including the step of placing a glass preform in the furnace passage and drawing the optical fiber from a tip of the glass preform.

17. The method of Claim 16 wherein the tip is disposed upstream of the first tube opening.

18. The method of Claim 17 wherein the tip is disposed a distance of between about 100 and 400 mm upstream of the first tube opening.

19. The method of Claim 14 wherein the forming gas is selected from the group consisting of helium, argon, nitrogen and carbon monoxide.

20. The method of Claim 14 wherein the apparatus includes a door assembly disposed adjacent the second tube opening and defining a door opening, and including the step of adjusting a size of the door opening.

21. The method of Claim 14 including the step of removing a sample portion of the forming gas from the furnace passage through an auxiliary passage during said step of drawing an optical glass fiber.

22. The method of Claim 14 including the step of flowing a purging gas into the furnace passage through an auxiliary passage while the optical glass fiber is not being drawn.

23. The method of Claim 14 wherein the inner diameter of the tube passage is substantially uniform from the first tube opening to the second tube opening.